



WELLS + ASSOCIATES

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DATE: May 5, 2009²⁰¹⁰

SUBJECT: Summary of Comments and Responses for
SPEX 2010-0001- Ryan Road Child Care Center;
Loudoun County, Virginia

Introduction

This letter presents a summary of comments and responses regarding the Ryan Road Child Care Center. The site is located on the north side of Ryan Road (VA Route 772) and east of Belmont Ridge Road (VA Route 659) in the Brambleton area of Loudoun County, Virginia. This letter is based on comments provided by Loudoun County Office of Transportation Services (OTS) dated April 29, 2010.

The comments provided by the County are based on the Ryan Road Property Special Exception Traffic Impact Study Update dated January 8, 2010.

The following summarizes the comments and responses regarding the traffic study. All revised tables and figures are attached.

Summary of Loudoun County Comments and Responses

County Comment 1. The Applicant's traffic study notes on page 6 that Ryan Road (Route 772) includes a crest / vertical curve in the vicinity of the proposed site entrance opposite Legacy Park Drive. This has been confirmed by OTS staff in a recent field visit. The applicant will need to demonstrate that adequate sight distance is provided to meet VDOT standards. This should be confirmed with VDOT.

W+A Response 1. As identified in new Condition 8a, the sight distance will be verified at the time of site plan review and will be confirmed with VDOT.

County Comment 2. The unsignalized Ryan Road (Route 772)/Legacy Park Drive intersection is currently operating at LOS C or better during both peak hours. However, the Applicant's traffic study also shows that with

the addition of the site entrance, the southbound approach from the site to Ryan Road would operate at LOS E during both peak hours, assuming the addition of a separate southbound right turn lane (see **Attachment 8**). A condition of approval requiring installation of this turn lane is necessary. Further, the traffic study notes that enough gaps in through traffic flow will be created by the traffic signal at Belmont Ridge Road (Route 659) combined with the wide median on Ryan Road (Route 772) for storage and separate lanes for southbound traffic. Additional information, demonstrated by a traffic study addendum or other analysis, is required to substantiate this assertion. Any additional analysis should examine the possibility of a signal at this intersection and the signal's relationship with the existing signal at Belmont Ridge Road (Route 659) and Ryan Road (Route 772).

W+A Response 2. A new Condition 8b has been added that requires the installation of the separate southbound right turn lane as shown on the Special Exception Plat. The unsignalized maneuvers for vehicles on the side streets of Ryan Road require a two-stage gap acceptance based on the wide median that is available for storage. Thus, these vehicles cross two lanes, then proceed across or into the adjoining lanes to enter the mainline traffic stream. The number of available gaps for vehicles to make these maneuvers were observed through field data collected by W+A in the peak hour, peak direction, (eastbound during the AM peak/westbound during the PM peak) along Ryan Road. Gaps were measured beginning at a minimum of six (6) seconds and recorded during each of the peak hours studied and are summarized on Table I in Appendix A.

The results indicate that majority of gaps ranged from 8 to 9 seconds during the AM peak hour and from 6 to 7 seconds during the PM peak hour. A total of 1,031 seconds were available during the AM peak hour and 989 seconds during the PM peak hour. Assuming a minimum crossing maneuver time of 6.5 seconds per vehicle as identified in the HCM, a total of 158 adequate gaps are available for vehicles during the AM peak hour and 152 adequate gaps are available during the PM peak hour. Thus, it appears that these gaps would accommodate the side-street left and through vehicles (98 AM peak hour/42 PM peak hour) projected at the site entrance, based on current traffic conditions.

Although it is anticipated that the through traffic on Ryan Road will increase, the gaps recorded do not account for the likelihood of a new traffic signal that would eventually be installed at the Ryan Road/Claiborne Parkway intersection, located approximately 2,000 feet to the east of the site driveway. This signal would likely introduce larger gaps in the westbound direction during the evening peak hour. In addition, although the minimum gap size used in the study was six (6.5) seconds, field observations indicated that most vehicles are comfortable making these maneuvers at five (5) seconds. Assuming a 5 second gap, an additional 20 adequate gaps for vehicles would be added during the AM and PM peak hour.

As reported in the January 2010 traffic study, the site driveway would not meet VDOT spacing criteria for a traffic signal given the relatively short distance to Belmont Ridge Road (850 feet). Further, the traffic study indicated that warrants for signalization would not be met at this location under total future conditions (see Appendix A). Thus, based on the previously prepared traffic report, the relatively low side-street volume, and the

available gaps that exist, these side-street movements would operate without major delays as identified in the traffic study.

County Comment 3. The Applicant's traffic study notes on page 20, Conclusion #5, that a separate westbound right-turn lane on Ryan Road (Route 772) is needed into the proposed site entrance. This needs to be included in the conditions of approval with this application.

W+A Response 3. Provisions for this turn lane have been added to the site plan conditions for this project.

County Comment 4. Please note that the centerline of the site entrance approach to Ryan Road (Route 772) does not appear to properly align with the existing median break for Legacy Park Drive. The proposed roadway alignment must meet VDOT standards; confirmation by VDOT is necessary.

W+A Response 4. The Applicant reviewed and discussed the proposed plan and the alignment with VDOT. VDOT staff indicated that the alignment would be acceptable and this will be verified at site plan review.

County Comment 5. Interparcel access is recommended in order to reduce trip lengths and minimize impact on Ryan Road, a major collector facility. However, the opportunity for interparcel access may be limited for this particular site and the surrounding subdivision (SBPL-2010-0001) given the existing and approved developments on all surrounding parcels. Please confirm.

W+A Response 5. All of the adjoining properties have either been designed or are under construction. Thus, there are no opportunities for interparcel access.

County Comment 6. On Sheet 3 of the Plat, a 10' wide public access easement is shown along the site frontage. In order to facilitate pedestrian travel, it is recommended that the Applicant provide a 14' wide public access easement and a 10-foot wide trail along the site frontage along with a crosswalk across the site entrance. Subject to VDOT approval, the Applicant should also provide a crosswalk and signage to connect to the existing trail on the south side of Ryan Road (Route 772).

W+A Response 6. The public access easement, trail, and crosswalks have been added to the Special Exception Plat.

Questions regarding this document should be directed to Wells + Associates.

APPENDIX A
SUPPLEMENTAL TRAFFIC INFORMATION

Table I

Ryan Road Child Care Center

Ryan Road Gap Acceptance Study (1)

Gap Time (Sec.)	No. of Observations		Total Seconds	
	AM Peak	PM Peak	AM Peak	PM Peak
	Eastbound	Westbound	Eastbound	Westbound
6 - 7 seconds	18	35	108	210
7 - 8 seconds	17	25	119	175
8 - 9 seconds	19	19	152	152
9 - 10 seconds	10	13	90	117
10 - 11 seconds	10	6	100	60
11 - 12 seconds	2	7	22	77
12 - 13 seconds	2	5	24	60
13 - 14 seconds	2	3	26	39
14 - 15 seconds	3	3	42	42
15 - 16 seconds	5	1	75	15
16 - 17 seconds	1	-	16	-
17 - 18 seconds	1	-	17	-
18 - 19 seconds	2	1	36	18
19 - 20 seconds	4	-	76	-
20 - 21 seconds	1	-	20	-
21 - 22 seconds	-	-	-	-
22 - 23 seconds	1	-	22	-
23 - 24 seconds	-	-	-	-
24 - 25 seconds	-	1	-	24
25 - 26 seconds	-	-	-	-
26 - 27 seconds	1	-	26	-
27 - 28 seconds	-	-	-	-
28 - 29 seconds	-	-	-	-
29 - 30 seconds	1	-	29	-
30 - 31 seconds	-	-	-	-
31 - 32 seconds	1	-	31	-
Totals	101	119	1,031	989

Gap Time Required (2)

6.5 seconds/vehicle

Summary

Peak Hour, Peak Direction	No. of Adequate Gaps	Critical Movements
AM Peak Hour	158 gaps	98 vehicles
PM Peak Hour	152 gaps	42 vehicles

Notes: (1) Based on data collected by W+A on May 4 and 5, 2010.

(2) Crossing maneuver from minor street as defined by HCM.

Table H1
 Ryan Road (Route 772)/Legacy Park Drive/Future Site Driveway
 Ryan Road Property
 2015 Total Future
 Warrants IA, IB, IC

	Ryan Road (Route 772)		Legacy Park Drive/Future Site Driveway		Warrant
	Projected ADT	Min. Required EADT*	Projected ADT	Min. Required EADT *	
Warrant IA - Minimum Vehicular Volume	20,340	9,600	290	3,200	No
Warrant IB - Interruption of Continuous Traffic	20,340	14,400	290	1,600	No
Warrant IC - Combination 80%	20,340	7,680	290	2,560	No
	20,340	11,520	290	1,280	No

Source: Institute of Traffic Engineers, Manual of Traffic Signal Design, 2nd Edition (Numbers revised by VDOT/NOVA policy)
 Notes: * Minimum Required EADT is based on number of approach lanes.